International Journal of Information Movement *Vol. 9 Issue X* *(February 2025)*

Website: www.ijim.in *ISSN: 2456-0553 (online)* **Pages 59-68**

A BIBLIOMETRIC STUDY OF THE ENVIRONMENTAL TECHNOLOGY AND SANITARY ENGINEERING JOURNALS ARCHIVED IN DIRECTORY OF OPEN ACCESS JOURNALS

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Abstract: Open access movement is a new dimension in this generation for scholarly publishing that aim to provide free access of research literature on World Wide Web and has gained enormous momentum now a day. In recent years open accesses journals are increasing frequently. Open Access Journals in different disciplines are available over the internet. DOAJ facilitate free open access journals for the users in a one platform. The Directory of Open Access Journals (DOAJ) archived 51 Journals in Environmental Technology and Sanitary Engineering from 2004 to 2017. The paper analyzed and interpreted subject-wise distribution of journals in technology category in DOAJ. Analysis indicates that Environmental Technology and Sanitary Engineering journals in DOAJ, under Technology stream, stands in fifth position. The analysis shows that highest no. of journals added in the year 2017. The country wise analysis indicates that Indonesia is on 1st rank. Distribution of Prominent Languages reveals that English is on 1st rank followed by Indonesian Language. Analysis of publishing mode of Journals shows that combination of print vs online journals is on majority. Pattern of Review System indicate that Blind Peer Review is most preferred pattern by Journals. File/format used by Journals for downloading/viewing of papers. Indicate that PDF format is preferred by Journals to giving option for viewing/downloading the papers. Distribution of Subject Headings of Journals indicates that subject heading Technology: Environmental Technology and Sanitary Engineering is in 1st rank with 58 Journals used as a heading followed by Technology: Geography, Anthropology, Recreation: Environmental sciences is in 2nd rank with this heading used by twelve journals.

Keywords: Open Access Movement, Budapest Open Access Initiative, Directory of Open Access Journals DOAJ Journals, Open Access Indexing, Bibliographic Data, Lund University, Peer-reviewed Open Access

1.0 Introduction

The open Access movement started in the developed countries and marked by three notable eclarations Budapest Open Access Initiative in 2002, Bethesda statement in June 2003[2], Berlin declaration in October 2003 ·Berlin declaration on open access was written in oct 2003 in which specified two conditions for contributions i.e. all users a free, irrevocable, worldwide, right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose. The academic institutions and scholarly society etc seeks to enable open access, unrestricted distribution, inter operability, and long-term archiving. The open access offers vast advantages i.e. Access, Search Options, Modes of Availability, Author and Institution Visibility, Publishing costs and provide access free of cost for the general public and helpful to author in getting higher citation rates."The Directory of Open Access Journals (DOAJ) was established in 2003 at Lund University, Sweden, with 300 open access journals. Today, the independent database contains ca. 12000 open access journals covering all areas of science, technology, medicine, social science and humanities." Its focus on mission to increase the visibility, accessibility, usage and impact of quality open access scholarly research journals globally, reputation, peer-reviewed, regardless of discipline, geography or language. DOAJ is committed to provide free service to use and reuse for everyone.

2.0 Review Of Literature

The proper review of literature has been conducted of better understanding of this type
of studies and refereed various sources for study like Google scholar; database of journals; website of journals and so on; the following study has been reviewed:

K. Thavamani (2015) Study analyze the sports science journals in Directory of Open
Access Journals by using Bibliometric parameters and focus to know the country of origin, publication fees and license agreements etc. In having journals in the Directory.

Hulagabali, S. C. (2012) studies the Library and Information Science journals with by using bibliometrics parameters. The study analyzed the year-wise, language-wise distribution, country-wise etc.

Alhamdi FA, Khaparde V, Navghare SV (2015) Analyzed of Arab countries open access-Journalsindexed by Directory of Open Access Journals (DOAJ 44 Journals contributed from the Commercial(com) and 20 Journals were contributed from Organizational (org) mail Domain. Almost majority subject headings in Science Field.

Padmavathi N and M Veerabasavaiah (2017) study analyze that in Educational discipline 470 archived in DOAJ the study interpreted and use bibliometric techniques features for analyzing the discipline wise distribution, year wise growth distribution, language wise, country wise of Open Access Journals.

Asish Maity, Soumen Teli (2015) study Library and Information Science Journals archived in DOAJ directory the study analyze for the period from 2004 to 2014 The study indentifying the research scenario and the lacking areas of research.

Krishnan, K. Nagendran (2021) DOAJ All discipline (Open Access Directory of Journals). The objectives of this study are a multidisciplinary approach to analyze open access journals topic-wise, sector-wise and language-wise, year-wise.

Hawkins, Donald T. (2001) the paper analyze Electronic journals (e-journals) covering the field of information science have been studied. Twenty-eight e-journals were identified and ranked by number of articles on the subject they published

Sheikh, Arslan, Qousain Zahra, Amarzish, Richardson , Joanna (2022) The study present aquantitative analysis of open access (OA) journals in the field of medicine indexed in the Directory of Open Access Journals (DOAJ). The bibliographic data for this study was extracted from DOAJ and inserted into an Excel sheet for analysis. The retrieved data was analyzed by using different quantitative techniques to disclose the findings. The findings disclosed that 3627 OA journals related to the field of medicine are indexed in DOAJ, which represents a substantial increase from just 8 in 2002.

3.0 Research Methodology And Data Collection

The paper attempts to present a bibliometric study of journals In Environmental Technology and Sanitary Engineering in the Directory of Open Access Journals (DOAJ) platform. The study analyzed 51 journals on basis of some bibliometric parameters such as; year wise distribution of journals, country of publication, language of text, subject heading based distributions, inter- disciplinary subject field, peer review and archiving policy. The analysis is shown with help of tables and graphs. The bibliographic data of 51 journals[7]were taken from DOAJ on 31st January 2019 in excel file and analyze according to objectives of the study.

4.0 Objectives Of Study

1. To ascertain the Subject-wise distribution of journals in Technology category in DOAJ and share of Environmental Technology and Sanitary Engineering open access journals (as one of the growing disciplines)
2. To ascertain year wise distribution of journals in Environmental Technology and Sanitary Engineering.
3. To ascertain top journal publishing countries;
4. To know the prominent languages used in journals;
5. To analyze the pattern of a review system of different journals.
6. To ascertain distribution of publishing mode of Journals in Environmental Technology and Sanitary Engineering.
7. To know pattern of Review System of Journals in Environmental Technology and Sanitary Engineering.
8. To ascertain file/format used by Journals for downloading/viewing of papers.
9. To find out distribution of Subject Headings of Journals.

5.0 Data Analysis And Interpretation

5.1 Subject-Wise Distribution Of Journals In Technology Category In Doaj: The analysis of Subject-wise distribution of journals in Technology category[8] in DOAJ and the share of Environmental Technology and Sanitary Engineering journals in Technology category of DOAJ, stands fifth with 51 journals followed by Chemical technology (45 journals) got 5th rank .followed by Building Construction got 6thrank compared to the other subjects in technology category in DOAJ.

Table 1: Subject-Wise Distribution Of Journals In Technology Category In DOAJ

S.No.	Name of Subject	No. of Journals	percentages
1	Engineering (General). Civil engineering (General)	222	32.27
2	Technology (General)	108	15.70
3	Electrical engineering. Electronics. Nuclear engineering	75	10.90
4	Mechanical engineering and machinery	58	8.43
5	Environmental technology. Sanitary engineering	51	7.41
6	Chemical technology	45	6.54
7	Building Construction	34	4.94
8	Motor vehicles. Aeronautics. Astronautics	30	4.36
9	Mining engineering. Metallurgy	28	4.07
10	Hydraulic engineering	12	1.74
11	Manufactures	8	1.16
12	Ocean engineering	8	1.16
13	Home economics	3	0.44
14	Photography	3	0.44
15	Bridge Engineering	1	0.15
16	Handicrafts. Arts and crafts	1	0.15
17	Railroad engineering and operation	1	0.15
18	Highway engineering. Roads and pavements	0	0.00

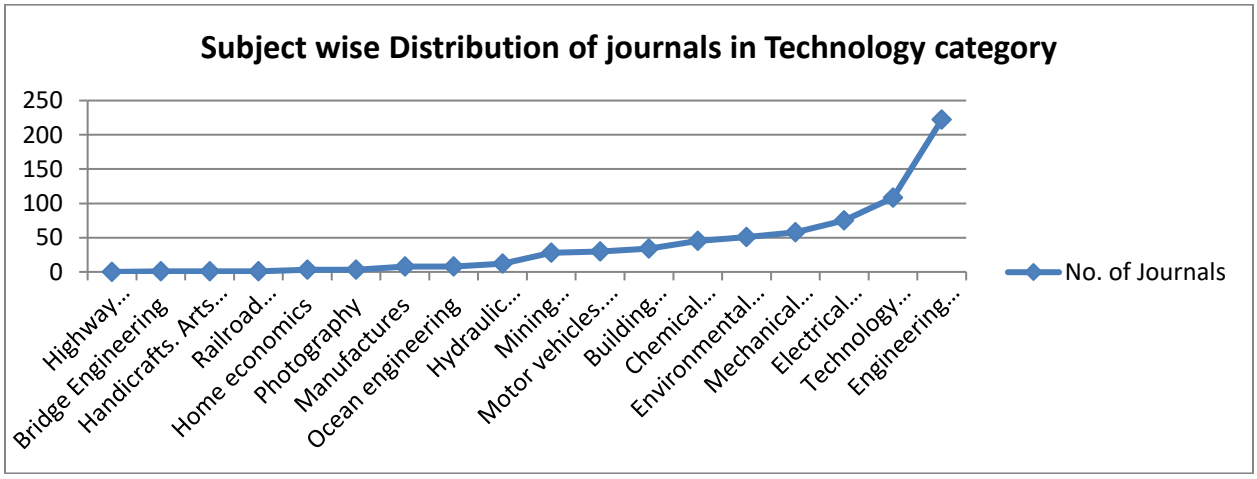

FIGURE 1: Subject-Wise Distribution Of Journals In Technology Category In Doaj

5.2 Year Wise Distribution Of Journal In Environmental Technology And Sanitary Engineering Journals : The Table-2 and Figure-2 shows the Year wise distribution of journals in Environmental Technology and Sanitary Engineering journals reveals that highest no. of journals added in the year 2017 i.e. seventeen nos. of Journals and none of journals added in 2006,2008,2009,2011,,2012,2013.

Table 2: Year-wise Distribution of journals

Year of added in DOAJ	No. of journals	Percentages
2004	1	1.96
2005	2	3.92
2007	1	1.96
2010	1	1.96
2013	2	3.92
2014	3	5.88
2015	6	11.76
2016	7	13.73
2017	17	33.33
2018	11	21.57

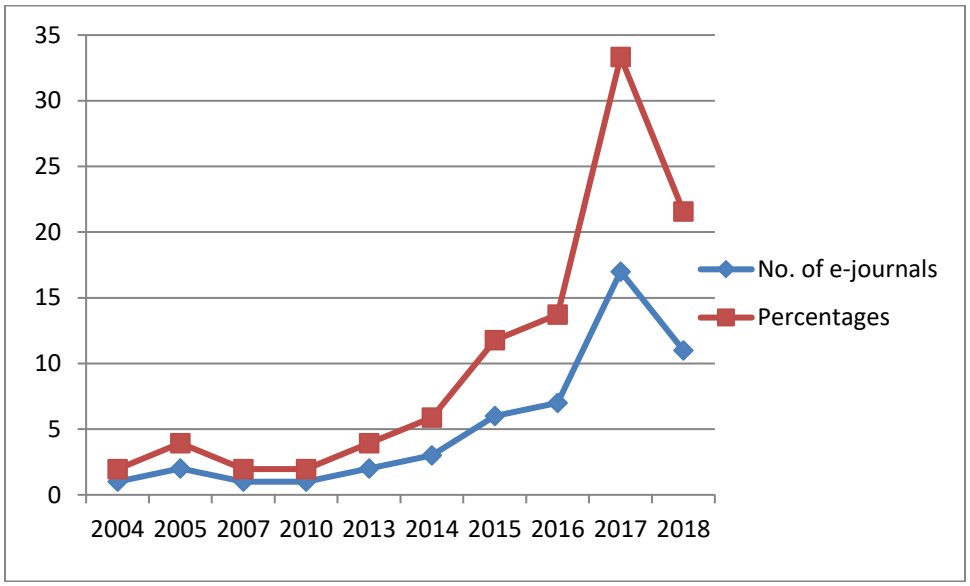

FIGURE: 2: Year-Wise Distribution Of Journals

5.3 Country Wise-Distribution Of Journals In *Environmental Technology And Sanitary Engineering* Journals In Doaj: The Table-3 and Figure-3 shows the country wise distribution of journals in Environmental Technology and Sanitary Engineering archived in DOAJ directory. Analysis of distribution reveals that Indonesia is on 1st rank with 10 no. of journals (19.71%), Poland is on 2nd rank with 07 no. of journal (13.73%) followed by Brazil 6 no. of journals (11.76%).

Table 3: Country Wise-Distribution of Journals

Country	No. of Journals	Percentages%	Rank
Indonesia	10	19.61	1st

Poland	7	13.73	2nd
Brazil	6	11.76	3rd
Iran, Islamic Republic of	5	9.80	4th
United Kingdom	4	7.84	5th
Germany	3	5.88	6th
France	2	3.92	7th
Morocco	2	3.92	7th
Colombia	1	1.96	8th
Cuba	1	1.96	8th
India	1	1.96	8th
Malaysia	1	1.96	8th
Mexico	1	1.96	8th
Netherlands	1	1.96	8th
Pakistan	1	1.96	8th
Spain	1	1.96	8th
Switzerland	1	1.96	8th
Thailand	1	1.96	8th
Ukraine	1	1.96	8th
United States	1	1.96	8th

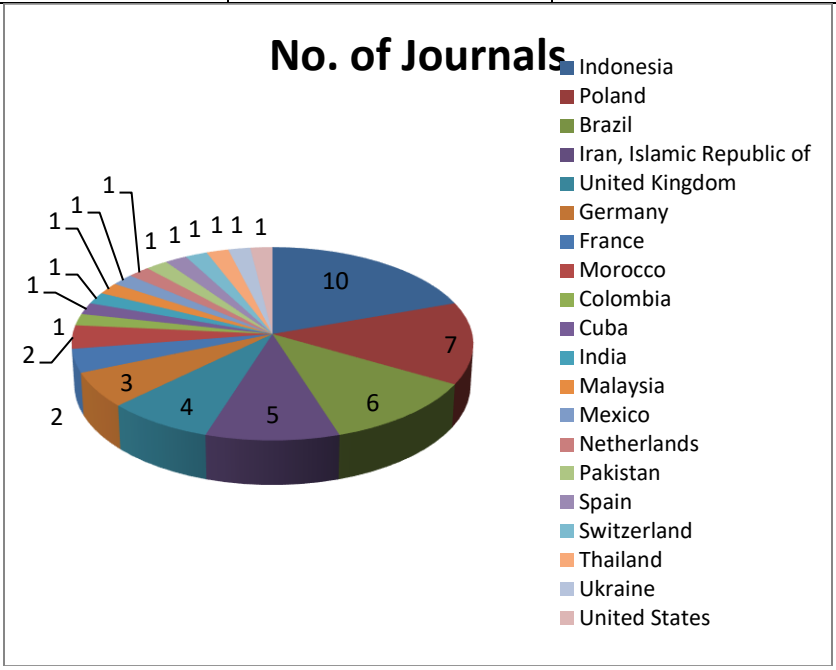

FIGURE-3: Country Wise-Distribution Of Journals In Doaj

5.4 Distribution Of Prominent Languages Uses In *Environmental Technology And Sanitary Engineering* Journals: Table-4 and Figure-4 shows the prominent languages used in Environmental Technology and Sanitary Engineering Journal archived in DOAJ. analysis reveals that English is on 1st rank with no. of journals i.e. 39 (76.47%) followed by Indonesian Language journals is on 2nd rank with no. of journals 09(17.65%).

Table-4: Language Wise Growth of Journals

Language	No. of e-Journals	Percentages	Rank
English	39	76.47	1st
Indonosian	9	17.65	2nd
Portuguese	6	11.76	3rd
Spanish	4	7.84	4th
Castilian	4	7.84	4th
Polish	3	5.88	5th
French	3	5.88	5th
Persian	2	3.92	6th
Russian	1	1.96	7th
Ukrainian	1	1.96	7th
Malay	1	1.96	7th

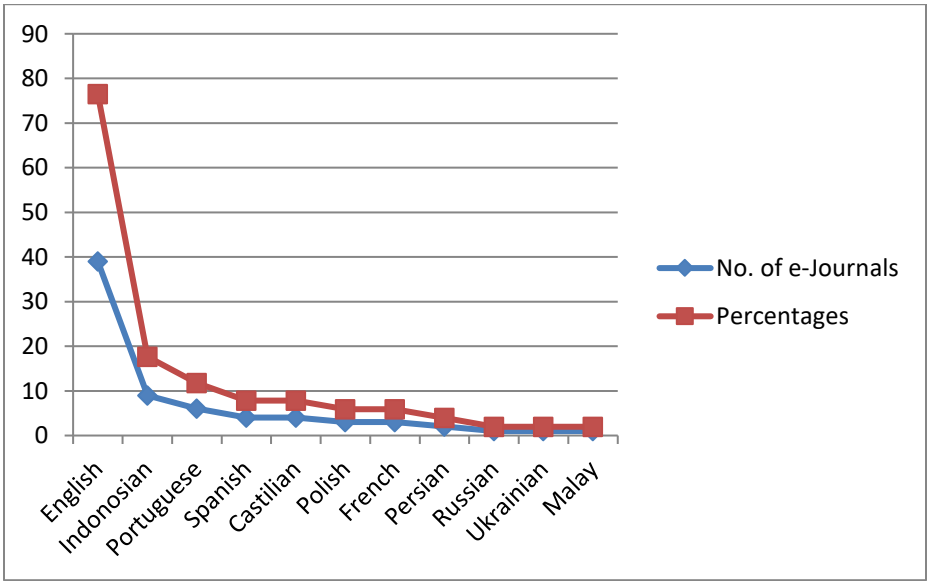

Figure-4: Language Wise Distribution Of Journals

5.5 Distribution Of Publishing Mode Of Journals Environmental Technology And Sanitary Engineering Journals: Table-5 and Figure-5 shows the publishing Mode of Journals in which they are preferred for publications, analysis reveals that combination of print vs online journals is on majority with no .of journal 28 (54.90%) followed by online mode of journal was 18 nos. (35.19%) and Print no. of journal was 5(9.80%).

Table-5 Publishing Mode of Journals

MODE	No. of journals	Percentages
Print	5	9.80
Online	18	35.29
Print and Online	28	54.90
Total	51	100.00

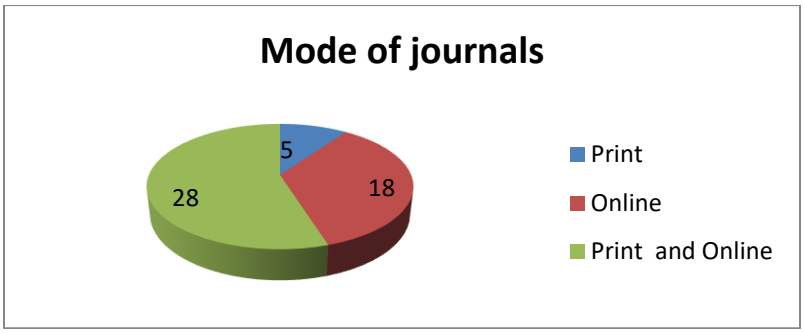

FIGURE-5 Publishing Mode Of Journals

5.6 Pattern Of Review System Of Journals In Environmental Technology And Sanitary Engineering Journals: Table-6, Figure-6 shows the pattern of review system of Journals in Environmental Technology and Sanitary Engineering Journals archived in DOAJ directory. It is reveals that Blind Peer Review pattern preferred by 18(35.29%) Journals in majority followed by Peer review pattern preferred by 17 (33.33%) of Journals followed by Double blind peer review preferred by 16 (31.37%) of Journals

Table-6: Pattern of Review System of Journals

Pattern of review system	No. of Journals	Percentages of total Journals
Blind peer review	18	35.29
Peer review	17	33.33
Double blind peer review	16	31.37
Total	51	100

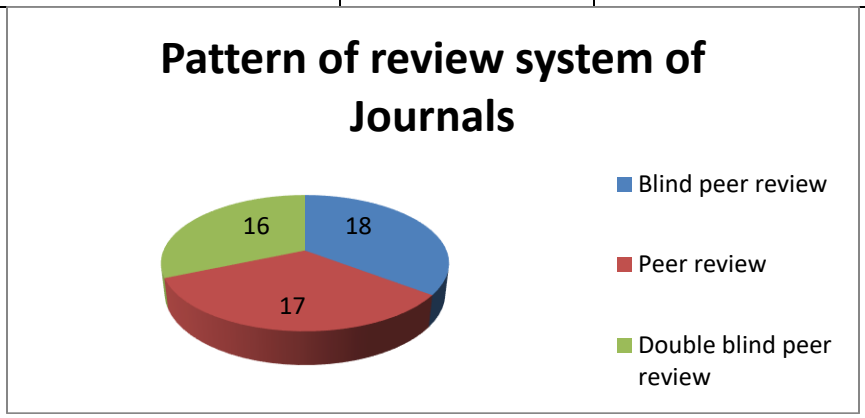

FIGURE-6: Pattern Of Review System Of Journals

5.7 File/Format used by Journals for downloading/viewing of papers: Table-7 and Figure-7 shows File/format used by Journals for downloading/viewing of papers. It is reveals that PDF is on 1st rank with 51 no. of journals given option to download the papers followed by HTML ranked at 2ndwith 13 no. of Journals given options to view/download papers followed by XML with 06 nos. journals (11.76%) used these format. Analysis reveals that PDF is top most preferred format used by journals for providing downloading/viewing of papers.

Table-7 File/Format used by Journals for downloading/viewing

File/Format	No. of Journals	Percentages%	Rank
PDF	51	100.00	1st
HTML	13	25.49	2nd
XML	6	11.76	3rd
EPbu	1	1.96	4th.
Readcube	0	0.00	5th
Browsable	0	0.00	5th.

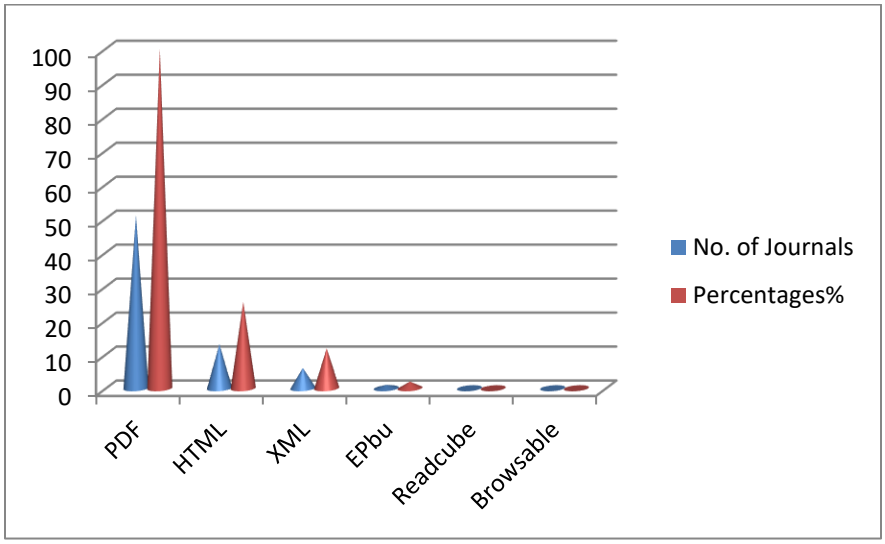

Figure-7 Format Used By Journals For Downloading/Viewing

5.8 Distribution of Subject Headings of Journals: Table-8 shows the distribution of subject headings in Environmental Technology and Sanitary Engineering journals. It is reveals that subject heading i.e. Technology : Environmental Technology and Sanitary Engineering is in 1st rank with 51 Journals used as a heading followed by Technology: Geography, Anthropology, Recreation: Environmental sciences is in 2nd rank with this heading used by 12 nos journals, followed by Technology: Engineering (General)in on 3rd rank with this heading used by 9 journals other are given table-8.

Table-8 : Distribution of Subject Headings of Journals

Subject Headings	No. of e-Journals	%	Rank
Technology: Environmental technology and	51	100	1st
Geography	12	23.53	2nd
Anthropology	12	23.53	2nd

Recreation: Environmental sciences	12	23.53	2nd
Technology: Engineering (General)	9	17.65	3rd
Civil engineering	6	11.76	4th
General): Environmental engineering	4	7.84	5th
Medicine	2	3.92	6th
Agriculture: Agriculture (General)	2	3.92	6th
Social Sciences: Industries	2	3.92	6th
Technology: Chemical technology:	1	1.96	7th
Science: Science (General)	1	1.96	7th
Science: Natural history (General): General	1	1.96	7th
geographical distribution	1	1.96	7th
Risk in industry	1	1.96	7th
Risk management	1	1.96	7th
Urban sociology	1	1.96	7th
Technology: Electrical engineering	1	1.96	7th
Management engineering	1	1.96	7th
Labor: Management	1	1.96	7th
Industrial management	1	1.96	7th
Medicine: Public aspects of medicine	1	1.96	7th
Science: Chemistry	1	1.96	7th
Electronics	1	1.96	7th
Nuclear engineering	1	1.96	7th
Technology: Hydraulic engineering	1	1.96	7th
Technology: Building construction:	1	1.96	7th
Structural engineering of buildings	1	1.96	7th
Technology: Mechanical engineering and	1	1.96	7th
Technology: Manufactures	1	1.96	7th
Science: Physics	1	1.96	7th
Agriculture: Forestry	1	1.96	7th
Science: Geology	1	1.96	7th
Technology: Chemical technology: Chemical	1	1.96	7th
Social Sciences: Communities	1	1.96	7th

6.0 Finding & Conclusion

The Directory of Open Access Journals (DOAJ) archived 51 Journals in in Environmental Technology and Sanitary Engineering from 2005 to 2017. The subject-wise distribution of journals in Technology category in DOAJ is reveals that the share of in Environmental Technology and Sanitary Engineering journals in DOAJ, under Technology stream, it stands fourth with 51 journals. The year wise distribution of journals reveals that highest no. of journals added in the year 2017 i.e seventeen nos. the country wise distribution of journals analysis reveals that Indonesia is on 1st rank with 10 no. of journals (19.61%),Distribution of Prominent Languages Used in Environmental Technology and Sanitary Engineering Journals reveals that English is on 1st rank with no. of journals i.e. 39 (76.47%) followed by Indonesian Language journals is on 2nd rank with no. of journals 09 (17.65%) Distribution of publishing Mode of Journals In Environmental Technology and Sanitary Engineering reveals that combination of print vs online journals is on majority with no .of journal 28 (54.90%). reveals that Blind Peer

Review pattern preferred by 18(35.29%) Journals in majority followed by Peer review pattern preferred by 17 (33.33%) of Journals followed by Double blind peer review preferred by 16 (31.37%) of Journals. File/format used by Journals for downloading/viewing of papers. It is reveals that PDF is on 1st rank with 51 no. of journals given option to download the papers followed by HTML ranked at 2ndwith 13 no. of Journals given options to view/download papers followed by XML with 06 nos. journals (11.76%) used these format. Analysis reveals that PDF is top most preferred format used by journals for providing downloading/viewing of papers.. Distribution of subject headings of Journals is reveals that subject heading i.e. Technology : Environmental Technology and Sanitary Engineering is in 1st rank with 51 Journals used as a heading followed by Technology: Geography, Anthropology, Recreation: Environmental sciences is in 2nd rank with this heading used by 12 nos journals, followed by Technology: Engineering (General)in on 3rd rank with this heading used by 9 journals

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